

Brillouin scattering study of elastic properties in ferroelectric $(\text{CH}_3\text{NH}_3)_5\text{Bi}_2\text{Br}_{11}$ crystal.

Autorzy

M. Pavel

A. Fousková

Ryszard Jakubas

Andrzej Miniewicz

Rok wydania

1993

Czasopismo

Ferroelectrics

Numer woluminu

146

Strony

37-43

DOI

10.1080/00150199308008524

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Elastic properties of $(\text{CH}_3\text{NH}_3)_5\text{Bi}_2\text{Br}_{11}$ (MAPBB) orthorhombic ($\text{mm}2$) molecular-ionic crystal have been studied employing Brillouin scattering technique. The values of all elastic stiffness constants c_{ij} were measured at room temperature. Dispersions of refractive indices in the visible region were determined at room temperature too. No anomaly of the longitudinal c_{22} - and the transverse c_{44} -mode frequency around the temperature of second order phase transition $T_c = 311.5$ K was observed whereas the longitudinal c_{33} -mode frequency exhibits a step of 1.5% near 306 K. Results were analyzed in framework of Landau free energy expansion and with Landau-Khalatnikov approximation.

Słowa kluczowe

Brillouin scattering, elastic stiffness, acoustic phonons, ferroelectrics, $(\text{CH}_3\text{NH}_3)_5\text{Bi}_2\text{Br}_{11}$

Adres publiczny

<https://doi.org/10.1080/00150199308008524>